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**PROCEEDINGS**  
**OF THE**  
**AMERICAN SOCIETY OF MICROSCOPISTS.**

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*SEVENTH ANNUAL MEETING.*

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The seventh Annual Meeting of the Society was held in Rochester, N. Y., August 19th, 20th, 21st and 22d, 1884. The first session was called to order at 2.30 P. M., August 19th, in the Hall of the Free Academy, by Mr. H. F. Atwood, President of the Rochester Academy of Science. For the Academy and other Scientific organizations of the city, he addressed the Society as follows:

**MEMBERS OF THE AMERICAN SOCIETY OF MICROSCOPISTS:**

It is with great pleasure that, in behalf of the scientific societies of this city, I welcome you to Rochester. We recognize the importance of your annual meetings, and appreciate the honor conferred upon our city, by your selection of it as a place of meeting.

I have reason for feeling a peculiar pride in greeting you here. Six years ago this month about forty of us gathered together in Indianapolis and there conceived and organized the American Society of Microscopists. As Secretary of that Congress it fell to my lot to report the proceedings of it to the scientific press. In my report the prediction was vouchsafed that before many years the American Society of Microscopists would be a prominent society in our land and a recognized power in the scientific world. That prediction has been fulfilled. To-day you stand foremost in your special line of study, and only second as regards membership, to any national scientific body in this country; and I may add that you stand second to none as regards the importance and character of your work.

Those of you now present who were at the initial meeting will appreciate my remarks when I say, the American Society of Microscopists is not seeking admission now to any society as a sub-section. Gentlemen, I welcome you to a city that has done more to popularize the use of the microscope than any other city in the world. Before you leave us I trust many of you may have opportunity of adding a practical knowledge to your theoretical, of the construction of your favorite instrument. Your time here is short; every moment is valuable; I shall therefore

consume no more of it, but before resuming my seat take great pleasure in introducing to you our honored Mayor, Hon. C. R. Parsons. He will express to you the sentiment of our citizens respecting your visit with us.

Mayor Parsons pronounced the following cordial welcome:

*Visiting Friends*—The Flower City with its institutions of learning, with its nurseries and gardens of flowers, with its hospitable and generous people, and with all its varied attractions, opens wide to-day its gates and doors, and through me, its servant, bids you cordial welcome. The fact that this year's national session of your organization is to be held in Rochester, is a matter of considerable importance to us, and doubtless our people will be greatly interested in your discussions and deliberations. Optics, that branch of science which treats of the nature and properties of light, is of very early origin, and like the early history of all sciences cultivated by the ancients, that origin is veiled in obscurity; but its principles are in their application as far-reaching as space, and in the results attained of incalculable benefit to mankind. Among these applications, microscopy and the use of the microscope stand among the foremost in point of interest and achievement; by them almost every branch of natural history has been greatly enriched and our knowledge of the little great things of the world immeasurably increased.

The Society whose guests, in some sense, you will be while with us, is one of which we are justly proud. It has done much to develop among us a taste for and interest in the use of that wonderful instrument which gives to your Society its name, and to diffuse among our citizens somewhat of the vast stores of practical knowledge which can only come from actual acquaintance with and use of the instrument itself. Our city, which contains so many manufacturing establishments pointing heavenward, the products of which seek the markets of the world through every avenue of trade, is also justly celebrated for the manufacture of optical instruments. The factory of the Bausch & Lomb Optical Company, beautifully situated, attractive in construction, and successfully conducted, furnishing, as it does, steady employment to many worthy and skilled artisans, is one of the institutions of which we have a right to boast and of which I am pleased to make especial mention on this most appropriate occasion. Akin in its relations to the science of optics, though working in the opposite direction, is astronomy, which penetrates the heavens, disclosing the sublime secrets of distant universes. It also has been most assiduously and successfully cultivated in Rochester, as the Warner Observatory and the discoveries of Dr. Lewis Swift, which have so many times been heralded through our own land to distant nations, abundantly testify. For these reasons I feel that the place of this your annual meeting has been appropriately chosen, and I trust, and doubt not, that while you remain with us your time will be most pleasantly and profitably spent; surely you could not be committed to better hands than those having you in charge, and with them, with the best wishes of the citizens of Rochester, I now confidently leave you.

The President of the Society, Jacob D. Cox, briefly and happily responded to these hearty greetings.

On behalf of the Society he heartily thanked the Mayor and Mr. Atwood for the cordial welcome which was extended to the members. Our American communities, he said, always showed an earnest interest in whatever pertained to science and to education, and the Society of Microscopists had close relation both to science and to education. The scientific side of their labors was often technical and lacking in interest for a general audience; but there is also an abundance of most interesting matter presented in the papers read at the meetings, in which everybody could find pleasure and profit. The wonders of the microscopic world are charming and fascinating in every department of nature and of life.

The microscope has become the prince of all instruments of investigation, and no field of scientific research is thoroughly explored without its aid. This very universality in its use has been made a reason for arguing that no separate organization of microscopists should be made; but experience has shown that all who investigate by means of the microscope will greatly profit by comparing their work in the different departments. The use of the instrument itself is, in a proper sense, an art in which expertness can only be secured and maintained by constant study of its construction, its manipulation, and the effects of changing methods upon the appearances of objects. It seems, at first blush, a very simple thing to look and see what a powerful lens reveals; but we have also to learn, that light plays strange tricks, and that refraction and diffraction may create will-o'-the-wisps which the unskillful examiner may mistake for substantial verities and become the dupe of.

The field of work for a Society of Microscopists, therefore, would seem to be the study of such typical forms of investigation in the several departments of nature as may reciprocally assist each other, and give to each investigator the benefit of the experience of others. He will thus find, in fields quite far from his own specialty, rich and suggestive instruction in the interpretation of appearances, in devices for the more successful manipulation of his instruments, for the detection of fallacies of observation, for aiding in easy and successful experiment, for preparation of objects, &c., all of which proves to be of great value to those who will make use of them. The Society does not profess, then, to be the exponent of universal science; but the common ground on which all who use the microscope in original investigation or in education may meet for the comparison of methods and for the improvement of the instrument itself and of practical familiarity with it.

As a general educator the microscope appeals to everybody who is in any degree susceptible to the marvels of nature. Its simpler uses are within the reach of all. In every family the horizon of knowledge may be indefinitely widened by its use. The new world it exhibits comes to an inquiring mind with the healthful shock of startled surprise, and awakens it to a suddenly enlarged perception of what the universe is, and of what it means to investigate hidden things.

We present, therefore, the microscope in both its scientific and its popular uses, valuable, inestimably valuable in all, and we earnestly invite all your citizens to attend these meetings, believing that their lives will be broader and their ideas of science more elevating by what they may carry away with them.

The President then called upon Rev. Dr. Landsberg to offer prayer; his impressive prayer was the following:

Heavenly Father, source of all life and light and wisdom, whose greatness no human mind can compass and whose love no human heart can fathom, whom the heavens and the heaven of heavens do not contain, with deep gratitude and peculiar devotion do we meet this day in thy universal church which is not confined by sectarian boundaries but is broad as the universe Thou hast called into existence, whose only dogma is the duty to search for the truth and which includes all those who seek Thee in thy works. We thank Thee, our Father, that Thou hast brought together from all sections of our beloved country this beautiful gathering of priests in the Temple of Science, men whose occupation is so peculiarly calculated to lead back the wandering intellect to religious emotions, and to proclaim to the astonished eye the secret workings of an omnipotent Creator; men whose investigations preach with overwhelming eloquence that even in the smallest and most minute manifestations of creative power looms up the glory of an all-wise Governor. We thank Thee for this dignity and sacredness in science which makes the student rise from it hallowed and elevated. We thank Thee that it so powerfully engages the present century, and by its ideal majesty and continuous revelation of ever new miracles counteracts that low and narrow materialism which threatens to bury all the sublimest aspirations of our divine nature in the common gulf of selfishness and worldliness, and which prompts man, the feeble tenant of an hour, to regard himself in the pride of his property or the vanity of his knowledge as the master of creation. We thank Thee that the scientific spirit of the age sheds bright light into the haunts of prejudice, drives out superstition, and though showing the futility of many beliefs which seemed to be as firmly established as the foundations of the earth, tends to fortify true religion by leading men closer together and by teaching them more and more forcibly that in spite of outward differences they are all brethren, children of the same loving Father. With a particular sense of joy do we express our gratitude, Heavenly Father, that our beloved city has the honor and the privilege of greeting as guests so many distinguished visitors and eminent investigators of thy works, every one of them a minister who teaches thy truth. Grant that this assembly may exercise a lasting influence on our fellow-citizens, and animate them to even greater efforts in reaching and interpreting thy revelations in the glorious book of nature. Grant that this Society may continually grow and increase in usefulness. Grant that the spirit of peace and brotherly love may preside over the deliberations of this body, and crown with success all those who work for their own instruction and for the enlightenment of

their fellow-men. Send thy blessing upon our proceedings, that thy spirit may rest upon all who participate in them, the spirit of wisdom and understanding, the spirit of counsel and might, the spirit of knowledge and the fear of the Lord. Amen.

President Cox said that before proceeding with the regular business of the session he wished to announce that the Society was honored by the presence of two distinguished representatives of the Royal Microscopical Society of London, Rev. W. H. Dallinger, President, and Mr. Alfred W. Bennett, Member of the Council. He expressed his own great personal pleasure and that of the Society as well, at having with us at this meeting men whom we have long known and esteemed on account of their researches in natural history; we were certainly very happy to meet them and to know them personally. He also recognized the courtesy shown the American Society by the oldest and most successful Microscopical Society in appointing a deputation to our annual meeting. On invitation Mr. Dallinger and Mr. Bennett took seats beside the President. On being introduced Mr. Dallinger addressed the Society. During his remarks he said that it was a matter of great interest to him to be present at the meetings. As the representative of the London Society he wished to express his lively appreciation of the work being done by the American Society. That which linked the two organizations together was the fact that both were laboring in the interests of humanity. Much light has been thrown on the causes of disease by the researches of microscopists who are grappling with the *sources* of disease and thus endeavoring to rid society of its deadliest evils. In conclusion he presented the most cordial greetings of the Royal Microscopical Society which, he said, had the heartiest interest in the work of its American co-laborer.

Mr. Bennett was then introduced. He referred to the good work being done by the American Society. He also emphasized the benefits to be derived from a society devoted to practical study and use of the microscope. It gave him great pleasure to meet with the Society in the beautiful City of Rochester.

On recommendation of the Executive Committee the following persons were elected members of the Society:

E. L. Cheeseman .....	Knowlesville, N. Y.
Andrew T. Veeder .....	Schenectady, N. Y.
Eugene E. Barnum .....	Waterport, N. Y.
W. F. Edwards .....	Niles, Mich.
A. L. Nields .....	St. Joseph, Mo.
D. V. Dean .....	St. Louis, Mo.
Otto A. Theile .....	Milwaukee, Wis.
J. T. Greenleaf .....	Owego, N. Y.
R. P. H. Durkee .....	Chicago, Ill.
H. B. Chamberlin .....	Denver, Col.
Edmund E. Read, Jr. ....	Camden, N. J.
John A. Bagley .....	New York City.
Chas. E. Alling .....	Rochester, N. Y.
Geo. Duffield .....	Detroit, Mich.
Frederick Starr .....	Cedar Rapids, Iowa.
Jas. E. Whitney .....	Rochester, N. Y.
H. L. Griffis .....	Binghampton, N. Y.
Thos. G. Lee .....	Rochester, N. Y.
Joseph N. Levi .....	Rochester, N. Y.
E. H. Vredenburg .....	Rochester, N. Y.
Henry H. Turner .....	Rochester, N. Y.
Julius Pohlman .....	Buffalo, N. Y.
A. B. Leckenby .....	Rochester, N. Y.
C. M. Briggs .....	Fairport, N. Y.
D. H. Talbot .....	Sioux City, Iowa.
Roswell Park .....	Buffalo, N. Y.
Louis H. Eaton .....	New Bedford, Mass.
York Patchin .....	Westfield, N. Y.

The following letters received by the Secretary were then read:

ROCHESTER, N. Y., August 11, 1884.

HON. J. D. COX:

*Dear Sir:*—The members of the American Society of Microscopists and their ladies are cordially invited to visit the Powers Art Gallery, on August 19th, 20th, 21st and 22d, from 3 to 5 o'clock.

Members will please show their badges, as tickets will not be required of them.

Respectfully,

D. W. POWERS.

ROCHESTER, N. Y., August 18, 1884.

H. F. ATWOOD, ESQ.,

President Rochester Academy of Science:

*Dear Sir:*—Thinking that a visit to our Seed House and grounds might not be without interest to the members of the American Society of Microscopists, we have pleasure in extending, through you, an invitation to the Society.

Yours truly,

JAMES VICK.

ROCHESTER, N. Y., Aug. 19, 1884.

MR. H. F. ATWOOD:

*Dear Sir:*—Please extend to the members of the American Society of Microscopists, now in session in this city, an invitation to visit the Warner Observatory, this, Tuesday, evening, when I shall be happy to show them the heavens through the great telescope.

Yours truly,

LEWIS SWIFT,

*Director.*

ROCHESTER, N. Y., Aug. 19, 1884.

*To the American Society of Microscopists:*—The Bausch and Lomb Optical Company present their compliments and extend to the members and their ladies a cordial invitation to visit their works on Wednesday at 7.30 P. M.

All departments will be in operation so that visitors will have an opportunity of witnessing the actual process of making microscopes and other optical instruments.

After the inspection of the works the visitors are requested to remain and spend the time in social intercourse.

Yours respectfully,

BAUSCH & LOMB OPTICAL COMPANY.

On motion by Dr. Fell the foregoing invitations were accepted and the Secretary directed to convey to the parties the thanks of the Society for the courtesy shown.

Mr. H. F. Atwood moved, that when we adjourn at the City Hall this, Tuesday, evening, we do so to visit the Warner Observatory as invited by Dr. Swift. Carried by a unanimous vote.

The Society then proceeded to the reading of papers as follows:

*The Morphology of Rheumatic Blood.*—Ephraim Cutter.

The paper was read by Dr. Geo. E. Blackham.



*Vegetable Organisms in Effluent Waters from Sewage-works.*—  
Alfred W. Bennett, of the Royal Microscopical Society.

Discussed by S. A. Lattimore, J. D. Hyatt, W. H. Dallinger, H. L. Smith and the author.

*Hair: Morphologically examined and Medico-legally considered.*—  
Wm. J. Lewis.

Discussed by C. H. Stowell, S. Hudson, W. H. Dallinger, of the Royal Microscopical Society, and the author.

Dr. Geo. E. Fell said, that he had been pained to hear of the death of Col. J. J. Woodward. As Dr. Woodward was an eminent microscopist, and although not a member of the Society, he thought it fit that a memorial resolution should be adopted. Upon his motion a committee consisting of President Cox, Professor W. A. Rogers and Dr. H. G. Beyer, was appointed for this purpose. [See p. 253.]

Mr. E. H. Griffith offered the following resolution:

*Resolved,* That a committee of three be appointed by the Chair, whose duty shall be the preparation of a suitable certificate of membership in this Society to be submitted for action before the close of this meeting.

Carried. The Chair appointed as said committee: E. H. Griffith, H. F. Atwood and Dr. John Sloan.

Dr. Geo. E. Blackham moved the election of Rev. W. H. Dallinger as an honorary member of the Society, the same having been recommended by the Executive Committee. Carried by a unanimous vote.

Adjourned to meet in the City Hall at 8 P. M. to listen to the Annual Address of the President.

#### EVENING SESSION.

At 8 o'clock a very intelligent audience assembled in the City Hall. Dr. S. A. Lattimore presided and introduced the President,

who read his Annual Address. The discourse occupied an hour and a half, and was a memorial of Robert B. Tolles and a presentation of the part taken by him in the discussion of the angle of aperture question.

On the platform, besides Dr. Lattimore, were H. F. Atwood, Alfred W. Bennett and W. H. Dallinger.

After final adjournment a large number of the Society visited the Warner Observatory. Dr. Swift courteously received his visitors, and a pleasant hour was spent examining the instruments and viewing heavenly bodies through the great telescope.

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WEDNESDAY, AUGUST 20.

The Society was called to order at 9.30 A. M., President Cox in the chair.

The minutes of Tuesday afternoon and evening sessions were approved as read.

On the usual recommendation the following persons were elected members:

Henry Lomb.....	Rochester, N. Y.
A. L. Woodward .....	Syracuse, N. Y.
Fred. A. Mandeville .....	Rochester, N. Y.
William Coutie.....	Troy, N. Y.
Delos Fall.....	Albion, Mich.

The reading and discussion of papers was then taken up.

*Notes on Infusoria, Rotifera, etc.*—D. S. Kellicott.

Discussed by S. H. Gage, T. J. Burrill, J. D. Cox and the author.

*The Extra-Vascular Circulation of the Blood.*—Jacob Redding.

Read by title.

*Observations on Infusoria with Descriptions of New Species.*—  
D. S. Kellicott.

An abstract only was read.

*Memoir of Robert B. Tolles.*—Geo. E. Blackham.

Discussed by W. A. Rogers, H. J. Detmers, H. L. Smith, T. J. Burrill and W. H. Brearley.

*The Deposition of Silver on Glass.*—Frank L. James.

Discussed by W. A. Rogers, H. L. Smith, S. H. Gage and C. H. Stowell. The author answered several questions asked by members.

W. H. Brearley moved the following:

*Resolved,* That Professor W. A. Rogers be requested to prepare a subscription paper and to receive subscriptions for a monument to Robert B. Tolles.

T. J. Burrill moved as a substitute:

*Resolved,* That W. A. Rogers, H. J. Detmers and Geo. E. Blackham be made a committee to report upon proper action, on the part of this Society, in memory of R. B. Tolles.

After discussion the substitute was carried and adopted.

Mr. Brearley offered the following resolution:

*Resolved,* That the same committee be asked to consider and report upon a suitable memorial for Chas. A. Spencer.

Carried

A communication received from Mr. Seth Green was read, inviting the Society to visit the grounds of the Fish Commission of New

York State at Caledonia. Mr. Green also presented the members with the Seventh and Tenth Reports of the New York Fish Commission.

On motion of Dr. George E. Fell, the thanks of the Society were tendered Mr. Green for his kindness.

The Chair expressed the desire of the Society to visit the Fish Hatcheries if time could be found during the meeting.

On account of the difficulty with which the speakers were heard in the Hall of the Free Academy, the local committee was asked, if practicable, to secure another room for the future sessions of this meeting.

Mr. Atwood, Chairman, reported that the Board of Education room on the first floor could be occupied for the remaining sessions.

The Society then adjourned to meet in Board of Education room at 2 P. M.

#### AFTERNOON SESSION.

The Society was called to order in the Board of Education room at 2 P. M. J. D. Cox in the chair.

The consideration of papers was at once taken up.

The first communication was entitled—

*An Improvement in Objectives.*—Ernst Gundlach.

*A New Apparatus for Photo-micrography.*—H. F. Atwood.

Discussion was participated in by Simon H. Gage, Jacob D. Cox, Wm. A. Rogers, Geo. E. Blackham, T. J. Burrill, H. L. Smith, and F. A. Paul. Mr. Atwood replied to objections and answered questions asked. Professor Lattimore was asked to state his views regarding substituting for the usual ground focusing-glass one prepared with

starch. He said he had secured good results by flowing the starch over the glass plate; not with high powers, however. A considerable part of the discussion referred to the use or disuse of the eyepiece in photo-micrography.

At the close of the discussion the President announced that acting for the Executive Committee he had communicated to the Rev. Mr. Dallinger that the latter had been elected a permanent, honorary member of the organization. Mr. Dallinger said: "Not only on my account, but on behalf of the Society I represent, I accept the honor with the greatest pleasure. While I have been among you I have felt that my interest in microscopy has widened. I feel that there is more earnest work being done here than I have hitherto realized. Anything I can do to further your interest I shall do with the greatest pleasure." After referring in complimentary terms to President Cox's address of the previous evening, Mr. Dallinger alluded to the death of Robert B. Tolles, saying the English microscopists regretted the decease of the eminent optician fully as deeply as American scientists had done.

A paper followed on

*A New Form of Section-cutter.*—W. A. Rogers.

It was discussed by Prof. S. H. Gage, Dr. C. H. Stowell, Dr. Geo. Duffield, Dr. Geo. E. Fell and Mr. F. A. Paul.

The following three short communications closed the reading of papers:

*Description of the Griffith Working Cabinet.*

*Description of the Griffith Nose-piece.*

*Description of the Griffith Turn-tables.*—E. H. Griffith.

These papers were discussed by J. D. Cox and W. H. Dallinger.

On the usual nomination the following were elected members :

Mrs. M. Louise Berneike.....	Brooklyn, N. Y.
Edward S. Holmes.....	Grand Rapids, Mich.
Joseph McKay.....	Troy, N. Y.

For the Committee on Memorials Dr. Blackham presented this report :

Your Committee would respectfully report that in their opinion this Society should express its willingness to receive and care for any moneys which may from time to time be voluntarily contributed for the purpose of perpetuating by suitable memorials the memory of the late distinguished opticians, our late honorary members, Charles A. Spencer and Robert B. Tolles, and we therefore offer the following resolution :

*Resolved*, That the Treasurer be directed to open two accounts with the Charles A. Spencer Memorial Fund and the Robert B. Tolles Memorial Fund, and credit to each all moneys contributed for that purpose and invest them securely till such time as an amount may be accumulated which this Society shall deem sufficient to pay for suitable memorials, and shall report at each annual meeting of this Society the state of each of said funds.

W. A. ROGERS,  
H. J. DETMERS,  
GEO. E. BLACKHAM.

The report was received and its provisions adopted.

After announcements the Society adjourned to visit the works of the Bausch & Lomb Optical Company in the evening.

#### WEDNESDAY EVENING.

In the evening, on invitation of the Bausch & Lomb Optical Company, the members of the Society, accompanied by many of their friends, visited the works. The building was perfectly illuminated, and every department in full operation. Those in attendance will not soon forget the pleasure and satisfaction of seeing skilled workmen engaged in every operation in the manufacture of eye-glasses, simple lenses, etc., up to the delicate and exact mechanics of the first grade of compound microscopes and objectives. The result cannot fail to be better knowledge of this noble instrument; and the gentlemen of the Optical Company and their courteous employes have certainly earned what they doubtless will receive, more than formal thanks from the Society. After the inspection of the works the party assembled in a large tent on the grounds, in which an elegant collation was in waiting. After this very enjoyable part of the even-

ing's programme, the genial President of the Rochester Academy of Science called the gathering to order, and on the part of the Optical Company heartily welcomed their guests. Then, in the capacity of toast-master, he called upon President J. D. Cox to respond to the toast: "*The American Society of Microscopists.*"

In response he referred to the interest manifested in the Society by its members, and the steady increase in membership notwithstanding that many objections had been made to the organization of the Society. Results had shown the wisdom of the founders of the Society. The speaker urged the members to make their work more scientific, so that the teaching of the Society should be an acknowledged authority. He thought there was industry and ability enough if they were rightly used. While the Society was receiving many congratulations the speaker urged the members to become more and more worthy of the congratulations which they had received

Rev. Mr. Dallinger, President of the Royal Microscopical Society, responded to the toast: "*The Royal Microscopical Society.*" He referred to the earnest work being done by the American society, saying that the researches of the organization had stimulated the English society to greater endeavors. He expressed the hope that both the English and American societies would make a special study of zymotic diseases, for the benefit of humanity. The form of a microscopic object was of far less importance than its pathological function.

The following toasts were also responded to:

"*Our Honored Dead—Charles A. Spencer and Robert B. Tolles.*"—  
Dr. Geo. E. Blackham.

He paid a tribute to the memory of these lamented members of the Society. Near the close of his remarks he suddenly changed his theme and became somewhat personal, referring to the Secretary of the Society and after assuring him that the Society appreciated his efforts to faithfully serve it during the past three years, said he had been requested by members of the Society to present him as a substantial expression of regard, a  $\frac{1}{8}$ -inch homogeneous immersion objective by Bausch & Lomb.

[The lens is certainly a work of art, a coveted and needed instrument, but the kindly feeling which prompted its bestowal far outweighs its value or the advantage of its possession. Simple thanks are inadequate expression of the recipient's gratitude; it is his intention that the work of this objective shall in the future more substantially express it.—D. S. K.]

"*Our Opticians.*"—Replied to by Edward Bausch.

"*Our Journalists in Microscopy.*"—Dr. C. H. Stowell.

"*The City of Rochester.*"—S. A. Ellis.

"*The Clergy.*"—Dr. Max Landsberg.

"*The Ladies.*"—Dr. R. H. Ward.

"*The Pioneers in Microscopy.*"—Professor H. L. Smith.

#### THURSDAY, AUGUST 21.

Society called to order at 9.30 A. M., President Cox in the chair.  
The minutes of Wednesday's sessions read and approved.

The following persons were elected members of the Society:

Chas. Weil.....	Buffalo, N. Y.
Geo. R. Bausch.....	Rochester, N. Y.
Howard N. Lyon.....	Auburn, N. Y.
Jay L. Smith, Jr.....	New York City.
W. C. J. Hall.....	Jamestown, N. Y.

The following letter was read and the three slides mentioned therein presented to the Society:

CROSBY HOUSE, TRAFALGAR ROAD, }  
MOSELEY, BIRMINGHAM, August 4, 1884. }

PROFESSOR D. S. KELLICOTT, Ph. D.,  
119 Fourteenth Street,  
Buffalo, New York.

*Dear Sir:*—By this post I send you a box containing three mounted specimens of *Leptodora hyalina*, an entomostracan first found in England at Olton Reservoir,



near Birmingham, in August, 1879. Thinking that they might be interesting to the members of the American Society of Microscopists, at their annual meeting on the 19th instant, I have despatched them with a hope that they will arrive in time. I herewith enclose a drawing of *Leptodora*, by a friend of mine; also a printed description by the then President of our Natural History and Microscopical Society. You will notice one male, one female with eggs in the egg-sac, and one female whose eggs have hatched and gone.

I am, dear sir, faithfully yours,

THOMAS CLARKE.

On motion of Prof. H. L. Smith, the Secretary was directed to express the sincere thanks of the Society to Mr. Clarke for these very valuable and beautiful slides.

The Nominating Committee was then duly elected by ballot as follows: Henry Mills, Henry D. Kendall, R. H. Ward, George E. Blackham, W. J. Lewis, S. H. Gage and E. S. Nott.

Papers were then read as follows:

*Exhibit "B," Julia Martin and People against Jesse Colby.*—Geo. E. Fell.

Discussed by S. A. Lattimore, E. S. Nott, A. C. Mercer, J. D. Cox and T. J. Burrill.

Mr. E. Gundlach asked as a question of privilege permission to offer a note of corrections.

The Chair permitted Mr. Gundlach to read the following:

At the Columbus meeting, 1881, Dr. Geo. E. Blackham read a paper on homogeneous immersion objectives claiming that such should be made adjustable. At that time I was, for theoretical and practical reasons, against this plan. Consequently Mr. L. R. Sexton some time ago asked me to write a paper on this subject and give my reasons why homogeneous objectives should be non-adjustable, but having then changed my opinion about said question, I replied to Mr. Sexton that instead of doing what he wished I would rather, from now, make no other than adjustable objectives. I thus consider it a matter of justice to Dr. Blackham to state this fact. I have already made a  $\frac{1}{4}$  homogeneous with adjustment.

The next paper was entitled:

*The Magnifying Power of Objectives and Lenses, with Tables of Measurements.*—W. H. Bulloch.

This was read by George E. Blackham.

*A Universal Screw for Microscope Objectives.*—Edward Bausch.

Discussed by T. J. Burrill.

On motion of Professor Burrill, Mr. Edward Bausch and Professor William A. Rogers were appointed a committee to correspond with the Royal Microscopical Society regarding the adoption of a new screw for microscopic objectives. Carried.

*A Few Hints on Hardening, Imbedding, Cutting, Staining and Mounting Specimens.*—George Duffield.

*Microscopic Fossils from the Boulder Clay.*—B. W. Thomas and D. S. Kellicott.

These papers were read by title.

*Thoughts on the Spongiadæ, with reference to the American Sponges of the Fresh-water Group, with some account of them in detail.*—Henry Mills.

The hour for adjournment having arrived, the reading was interrupted, to be resumed at the next general session.

After announcements, the Society adjourned until 2 P. M.

#### AFTERNOON SESSION.

At 2 P. M. the Society assembled in the hall of the Free Academy to witness a practical exhibition of methods of work by a number of experienced microscopists under the direction of Mr. E. H. Griffith. [For an account of the methods illustrated, etc., see pages 199, *et seq.*]

At 5 o'clock the Society adjourned, to meet at 8 o'clock in the New York State Arsenal for the Annual *Soirée*.

## SOIRÉE.

The Annual *Soirée* given at the State Arsenal by the Society and the Rochester Academy of Science, under the sole management of a committee of the Academy, was, without doubt, the most successful exhibition in the history of the Society. '[See page 234, *et seq.*, for a record of the Exhibits, etc.]

## FRIDAY, AUGUST 22.

The Society came to order at 9.30, Mr. Cox in the chair.

The minutes of Thursday's sessions were approved as read.

The following persons were then elected members of the Society:

Frederick L. June .....	Waterport, N. Y.
Charles N. Cobb .....	Auburn, N. Y.
William L. Carpenter .....	Dunkirk, N. Y.
Geo. U. Gleason .....	Rochester, N. Y.
Will. H. Olmstead .....	Syracuse, N. Y.

Prof. T. J. Burrill in the chair. Mr. Mills resumed and finished the reading of his paper on *Spongiadae*.

Then followed the reading of

*A New Lens-Holder*—R. H. Ward.

*An Iris Illuminator*—R. H. Ward.

Discussed by J. D. Cox and E. H. Griffith.

The committee appointed for the purpose of nominating officers reported as follows:

For President, Prof. Wm. A. Rogers, Cambridge, Mass. For Vice-Presidents, H. Franklin Atwood, Rochester, N. Y., and Chas.

H. Stowell, Ann Arbor, Mich. For Secretary for three years, D. S. Kellicott, Buffalo, N. Y. For Treasurer for three years, Geo. E. Fell, Buffalo, N. Y. For Members of the Executive Committee, Chas. Shepard, Grand Rapids, Mich.; A. B. Hervey, Taunton, Mass.; L. M. Eastman, Baltimore, Md.

Dr. C. H. Stowell moved that "we proceed to elect a Superintendent of the Working Department."

The Secretary was requested by unanimous consent to present the report agreed upon by the Executive Committee regarding the status of the Working Session.

The report is as follows:

WHEREAS, The number of important papers presented is greater than can be read in the time of our ordinary sessions, and is likely to increase, economy of time is, therefore, a necessity.

*Resolved*, That the Working Session be held hereafter during the same evening as the *Soirée* for the exhibition of microscopical objects, so that the time may be made available for both, and both be placed under the control of one committee of the Society to act with the local committee.

The adoption of the report was moved and after full discussion was lost.

Dr. Stowell's motion was then called up and prevailed. Mr. E. H. Griffith was unanimously elected to have charge of the working department in 1885.

Mr. Griffith expressed his thanks for the honor of this appointment by the Society and peremptorily declined to serve another year.

On motion of Dr. Stowell the whole matter was referred to the Executive Committee.

Dr. R. H. Ward then presented the report of the Standing Committee on Oculars. [See page 228.]

T. J. Burrill moved the adoption of the report. Carried unanimously.

Prof. Burrill also moved that the article by Mr. Frank Crisp in the Journal of the Royal Microscopical Society, III., 816, on *Optical Tube Length*, be reprinted as an appendix to the above report Carried.

The report of the Standing Committee, on the Standard Micrometer was read by Dr. Geo. E. Fell. [See page 220.]

By a unanimous vote of the Society, the report of progress was adopted and the committee continued with directions to go on with their work.

By the same vote the thanks of the Society were tendered to Prof. W. A. Anthony of Cornell University, for making the comparisons of the Fasoldt copies with the standard plate.

Dr. R. H. Ward explained in reference to the cost of the metal on which the Standard is ruled and which had been paid by Professor F. A. P. Barnard. He also moved, seconded by Dr. Fell, that the question of reimbursing Dr. Barnard be referred to the Committee on Micrometry. Carried.

Dr. Fell then read his report as Treasurer and Custodian. Referred to the Auditing Committee by consent. [See page 282.]

Adjourned to 2 P. M.

#### AFTERNOON SESSION.

Society called to order by President Cox at 2.15.

The reading of papers was then resumed.

*On Staining and Mounting Pollen.*—J. T. Brownell.

*The Syracuse Solid Watch-glass.*—A. Clifford Mercer.

Discussed by J. D. Cox.

*A New Mounting Medium.*—Hamilton L. Smith.

*The Ideal Slide.*—F. M. Hamlin.

Discussed by J. D. Cox.

*A Cover-glass Cleaner.*—Frank L. James.

Discussed by J. T. Brownell.

*A Rotating Section-Cutter.*—John J. B. Hatfield.

Read by title.

The following communication from the President-elect, Professor W. A. Rogers, was read :

ROCHESTER, Aug. 22, 1884.

PROF. D. S. KEL LICOTT,

Secretary A. S. M.;

*My Dear Sir :* I have been deeply moved by the expression of confidence shown in my election as President of the Society for the ensuing year, but I am sure the best interests of the Society would not be served by my acceptance. It is my present purpose to be absent from the country during the summer and fall of 1885. Will you, therefore, kindly communicate to the Society my declination of the great honor conferred. I need not say that it will always be both a duty and a pleasure to do everything in my power to promote the interests of the Society, and to justify the confidence shown in my election, but under the circumstances I cannot but think it would be wise to make another selection.

Sincerely yours,

W. A. ROGERS.

W. H. Brearley moved that a committee of two be appointed to wait upon Professor Rogers and endeavor to prevail upon him to withdraw his declination. The motion prevailed. The Chair appointed T. J. Burrill and D. S. Kellicott.

Professor S. H. Gage offered the following resolution: That the Society send to Dr. T. S. Up de Graff assurances of sympathy in his illness and of appreciation of his efficient services in the interests of the Society in the past with the expression of earnest wishes for his early restoration to health. Carried unanimously.

The following communications were then presented:

*Structure of the Diatom-shell and Photo-micrography in connection therewith.*—Jacob D. Cox.

The paper was illustrated by means of photo-micrographs and the stereopticon.

*The Diatom Valve.*—Richard P. H. Durkee.

[The remarks on this paper by J. D. Cox and H. L. Smith are printed in connection with the paper at page 105].

Prof. Burrill reported that Prof. Rogers had been waited upon by his committee, and Prof. Rogers could not be prevailed upon to withdraw his declination of the office of President.

The Nominating Committee was then requested by the Chair to present another nomination for President at as early an hour as practicable.

Mr. W. H. Brearley presented the report of a special committee appointed to prepare a form for a certificate of membership.

Your committee upon certificate desires to report as follows:

We recommend the preparation of a finely designed and lithographed treasurer's receipt, about the average size of certificates of stock, which shall represent the Society creditably and with appropriate symbolism, and which shall contain these words:

**This is to certify,** That.....of.....having paid his dues in the **American Society of Microscopists** to and including the .....of .....18 ..., is entitled to the privileges of the Society during the time named.

.....

*Treasurer.*

These shall also be numbered and stamped with the date stamp of the Society.

W. H. BREARLEY,  
H. F. ATWOOD,  
JOHN SLOAN.

Dr. F. M. Hamlin moved that the report be accepted and the committee discharged. Carried.

J. T. Brownell moved that the report be adopted. Lost.

On motion a committee was appointed by the Chair to devise and report at the next annual meeting a plan for collecting, storing and circulating among members of the Society, typical slides of microscopical preparations. The Chair appointed D. S. Kellicott, Louisa Reed Stowell and F. M. Hamlin.

Dr. H. J. Detmers suggested that at future annual meetings a room should be set apart for practical illustrations of methods of work. On his motion the matter was referred to the Executive Committee.

Henry Mills, Chairman of the Nominating Committee, reported the name of Prof. Hamilton L. Smith, of Geneva, N. Y., for President of the Society. Dr. F. M. Hamlin moved that Prof. Smith be elected. Carried by a unanimous vote.

Dr. C. H. Stowell moved that a vote of thanks be extended to the Bausch & Lomb Optical Company for the opportunity given by them to visit their works, and for the elegant entertainment provided. Adopted.

W. H. Brearley offered the following:

*Resolved*, That the thanks of this Society are due, and are hereby tendered, to the Local Committee for the very perfect arrangements made for the convenience and comfort of the American Society of Microscopists at its seventh annual meeting in Rochester.

Dr. Blackham moved that the thanks of this Society be extended to the daily papers of the city, especially the *Rochester Herald*, for the liberal amount of space devoted to the proceedings of the meeting. Carried unanimously.



President Cox said that before retiring from his office he desired to thank the members for their courtesy to him, and to congratulate the Society on the happy manner in which the convention had passed off. He then called H. F. Atwood, Vice-President, to the chair in the absence of Professor Smith, the President-elect.

Mr. Atwood, after thanking the Society for the honor that had been conferred upon him, referred to the gratifying progress made by the organization and the active interest shown by the members in the work.

Rev. J. T. Brownell proposed the following, which was unanimously adopted:

*Resolved*, That the profound, heartfelt thanks of this Society are eminently due, and are hereby tendered to our retiring President, Hon. J. D. Cox, for the thorough, efficient and urbane manner in which the varied duties of his office have been discharged, both during the year and especially during the sessions of this Annual Meeting; and that thanks also be extended to the other officers, all and several, who have worked so successfully, in conjunction with the President, to promote the prosperity of the Society.

On motion of Dr. F. M. Hamlin the Society adjourned *sine die*.

D. S. KELLICOTT,  
*Secretary.*

### REPORT OF TREASURER AND CUSTODIAN.

RECEIPTS AUG. 10, 1883, TO AUG. 19, 1884.

Balance Cash on hand Aug. 10th, 1883-----	\$450.70
Receipts from sale of Proceedings-----	68.15
Receipts, admission fees and dues-----	247.50
	<hr/> \$766.35

DISBURSEMENTS AUG. 10, 1883, TO AUG. 19, 1884.

Stationary, Circulars, Postage, etc.,-----	\$106.18
Chicago Proceedings-----	547.75
	<hr/> 653.93

Balance Cash on hand August 19, 1884-----	\$112.42
Receipts at Rochester, admission fees and dues..	325.40

	<hr/> \$437.82
Disbursements at Rochester-----	57.09

Balance Cash on hand August 22, 1884-----	\$380.73
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#### ASSETS.

Dues and admission fees unpaid-----	440.00
Possible available balance-----	<hr/> \$820.73

GEO. E. FELL,

*Treasurer and Custodian.*

Rochester, N. Y., Aug. 22, 1884.

### REPORT OF AUDITORS.

We beg leave to report that we have carefully examined the books and vouchers of the Treasurer for the year ending August 22, 1884, and have found the same to be correct.

WILLIAM A. ROGERS,

T. J. BURRILL,

*Auditors.*

Rochester, N. Y., Aug. 22, 1884.